MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

Ministry of Business, Innovation & Employment
15 Stout Street
PO Box 1473
WELLINGTON

3 July 2015

Dear Stakeholders,

The draft Electricity Demand and Generation Scenarios (EDGS) were published on April 2nd 2015. There were 14 submissions and 3 cross-submissions received. The Ministry of Business, Innovation and Employment (MBIE) thanks stakeholders for their submissions and engagement with the EDGS consultation. Your feedback is essential to the EDGS process and the submissions provided many useful suggestions. This document summarises the major themes of the submission and what the Ministry will do in response.

In Table 1 we have attempted to summarise the variety of responses and group them into the key "themes":

- EDGS too narrowly defined
- Should include regional peak demand forecasts
- Residential demand forecasts too high
- A "disruptive technology" scenario is required
- Generation cost database is out of date
- Timing of final EDGS (get it right rather than rush it)
- Improve scenario transparency
- Provide more detail on location of demand and generation
- Increased competition for water scenario
- Run a reservoir simulation model

Table 1 also outlines MBIE's plan on how to address each of these issues. Additional to those points raised in Table 1 were other suggestions which have been noted by MBIE and will be reflected in the EDGS work program where relevant. Please contact us directly at EDGS@mbie.govt.nz if you wish to discuss our interpretations and action plan.

Of the key themes, we have identified three high priority issues which MBIE will focus on immediately. These are the themes where there seemed to be a clear consensus among stakeholders and/or the impact is material.

Verifying peak demand forecasting

The Ministry asked for feedback on the best way to independently verify regional and prudent peak demand projection given their absence in the draft EDGS. The stakeholder response showed clear consensus that the Ministry should have "ownership" of Transpower's peak demand forecasts.

We have initially interpreted ownership as meaning we need a better understanding of the peak demand forecasting process. Accordingly, as a first step to understanding these forecasts, we have initiated a review of Transpower's peak demand forecasts (to be completed by NZIER). The assumptions and method behind Transpower's peak demand (regional, island and national level) forecasts will be

assessed within the context of the EDGS. The intention is to provide stakeholders confidence that peak forecasts are impartial and transparent. The review will be published alongside any recommendations on how best to embed the peak forecasts within the EDGS.

Residential demand forecasts

Most stakeholders expressed discomfort with MBIE's current residential demand forecasts, suggesting they were too high. Some stakeholders suggested that energy efficiency and changing consumer consumption patterns were shifting residential demand trends into new territory. Most stakeholders suggested reducing the residential demand growth forecasts in the base case scenario.

The Ministry will continue to explore a wide range of variables that could help explain recent demand trends. We will also consider Island level trends and check for consistency with the Transpower peak forecasts. The results of this analysis will be published alongside the peak demand forecast review.

Adding a disruptive scenario

The Ministry asked about whether the levels of solar and EV uptake were appropriate. Responses indicated a need to explore a scenario that considers higher uptake of new technology than the "Global Low Carbon Emissions" scenario. MBIE will develop a "disruptive technology" scenario which will focus on consumer driven changes (i.e. small scale distributed solutions as opposed to large grid connected solutions). The scenario could consider, among other things, higher uptake of:

- solar PV and battery storage,
- electric vehicles,
- residential wood burning.

Scenario design

Although there seemed to be no stakeholders who disagreed with the general scenario approach, there were many suggested small improvements. MBIE will revisit the scenario design and attempt to better reflect the uncertainty around:

- Huntly decommissioning (potentially including a scenario where two units stay)
- Tiwai decommissioning and underlying demand growth
- disruptive technologies

The results from this next phase of work will be presented at a stakeholder workshop in mid-August. This will be an opportunity to discuss these key themes before MBIE begin the detailed modelling work required to finalise the EDGS. We look forward to your continued engagement with the process.

Yours sincerely

Zac Clark
Energy Analyst, Energy and Building Trends
EDGS@mbie.govt.nz

Table 1: Key themes

Submission Feedback	Supported by	MBIE Action	Priority
EDGS purpose: some stakeholders think it is too narrowly defined given it is used for a number of other uses.	NZSG, CEN, TPW, MER	EDGS main purpose is as the input scenarios for capex IM, and MBIE will focus its resources into meeting this requirement. We recognise it is used for other purposes and we will continue to publish comprehensive assumptions and results.	Low
Regional and prudent peak demand forecasts should be included in the EDGS	Vast majority	We have committed to work with Transpower and other relevant parties to create a process to verify Transpower's regional and peak demand forecasts.	**High**
Support for adding disruptive technology scenario.	TP, NZSG, MM, MRP, NZWEA, NZIER/MEUG	We will add a scenario that reflects higher uptake of disruptive technologies.	**High**
Residential demand forecast should be reduced (as discussed at the April workshop)	NZIER, ENA, MM, CEN	We will review our residential electricity demand model and explore alternative data sources and methods in an attempt to better reflect current trends.	**High**
MBIE cost data (PB report 2011) is now quite old.	NZGA, NZWEA, CEN, TP, EL	There is a material time and cost investment required to update the PB report, and potentially small changes in relative costs between technologies would not warrant this investment. However, advances in wind turbine technology will need to be monitored and updated periodically, as will the costs of "disruptive" technologies.	Low
Include a scenario that accounts for increased competition for water	MER, TPW	We will explore adding a water reform scenario and check with stakeholders this addresses the issue appropriately.	Moderate
No rush to publish EDGS.	NZIER/MEUG, CEN, ENA	We will resolve (at a minimum) the "high priority" issues raised by stakeholders before publishing the EDGS. MBIE notes Transpower stated in their cross-submission that there is short term need (6-12 months) for EDGS for upcoming projects. At the next stakeholder workshop we will discuss timing.	-
Improving scenario transparency	NZIER/MEUG, ENA, TPW	MBIE will publish an assumptions matrix (which shows the interdependencies between assumptions and across scenarios).	Moderate
Scenario design: many stakeholders suggested small improvements	NZIER/MEUG, ENA, CEN, MER, TPW	MBIE will re-consider the overall scenario design, with a more explicit consideration of: • How to weave Tiwai and demand growth uncertainty into the scenarios, • Huntly closure (one scenario where it stays?)	**High**
Providing more detail on location of demand and generation	NZIER/MEUG, ENA	MBIE believes a move to regional generation modelling is not viable for this EDGS release. We will however publish an updated LRMC tool that contains regional supply curves, and consider whether any form of regional modelling could be included in subsequent EDGS.	Low
Run reservoir simulation model to help validate scenarios	MER, TP	MBIE will consider this for subsequent EDGS releases. The current focus is on other higher priority actions.	Low
Regulatory environment may change	MER, ENA	MBIE will hold constant the regulatory environment across all scenarios. Changes due to Transmission Pricing Methodology are difficult to predict and so cannot be considered. An exception will be in the new disruptive scenario where assumptions around changes to distribution pricing will be made.	Low

Table 2: Acronym List

Acronym	*Long name*
CC	Commerce Commission
CEN	Contact Energy
EA	Electricity Authority
EL	Eastland
ENA	Electricity Networks Association
MBIE	Ministry of Business Innovation and Employment
MER	Meridian Energy
MEUG	Major Users Electricity Group
MM	Molly Melhuish
MRP	Mighty River Power
NZGA	New Zealand Geothermal Association
NZIER	New Zealand Institute of Economic Research
NZSG	New Zealand Smart Grid
NZWEA	New Zealand Wind Energy Association
TP	Transpower
TPW	Trustpower